FinishLynx **Cross Country** LapTime RFID System

IPICO ELITE READER Quick Start Guide

Verify that your system contains the components pictured below.
If not, or if you need additional help, call: **USA 978 556 9780**

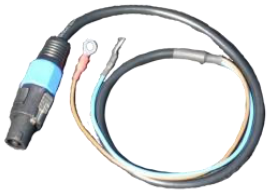
IPICO Elite Reader

Antenna Mat(s) (2.40m x 1.20m)

AC Power Supply/Charger

IPICO Shoe Tag(s)

Cross-over Cable



12v DC Battery Power Supply Connector

Lynx Resource USB Drive

Items Not Included

- Computer (laptop recommended) running Microsoft Windows, with an Ethernet port and a USB port.
- Network Hub/Switch
- Optional: IPICO Software (Dashboard/Tag Scanner) and Registration (USB) Reader

Introduction

In this quick start guide, you will learn how to set up and configure the FinishLynx LapTime plug-in, set up the IPICO RFID chip timing system, create a Map File, collect chip times.

For more detailed or advanced instructions, consult the IPICO Sport Elite Reader User's Manual.

Step 1: Prep IPICO Equipment

a. Always fully charge the battery when you first receive the unit. Time will depend on charger type used, but 16 hours is typical (Constant Voltage 13.8v type).

Note: Always recharge within 24 hours after use.

b. Use a label maker to identify the Shoe Tags (chips) in a sequential manner.

See Map File for more information on Tag ID.

Step 2: IPICO Reader and Mat(s) Setup for Competition or Testing

Read IPICO Sport Elite Reader User's Manual for best practices on how to avoid radio interference and optimal configuration using multiple mats (color order of mats and overlap are important to success of the system).

a. Position the antenna mat(s) at the finish location.

b. Position the IPICO reader in a safe, protected location near the finish area.

c. Plug the mat(s) into the appropriate port on the Reader.

d. Connect the IPICO Reader to the power supply (12v DC battery can also provide power using the IPICO Battery power supply connectors.

e. Connect the IPICO Reader to the network hub via an Ethernet (CAT5 or CAT6) cable.

f. Do NOT turn on the reader until the computer is on and connected to the network.

g. Power the IPICO Reader and allow a minimum of 2 minutes for the system to boot and synchronize.

h. Tune the antennas by pressing the **Manual Tuning Switch.**

Step 3: Configure Windows for a LapTime Device

The FinishLynx computer and the IPICO Reader must be configured on the same network subnet (the first 3 numbers of the IP address must be the same) to allow communication. The IPICO Elite Reader IP address factory default is: 10.19.1.101.

To change the IP address of the IPICO Lite Reader

a. Set the computer's IP address to the same subnet as the Reader:
   i. From the Windows menu, navigate to the **Control Panel.**
   ii. Double-click **Network and Sharing Center**.
   iii. Click **Change Adapter Settings.**
   iv. Right-click **Local Area Connection**, then **Properties.**
   v. Select **Internet Protocol Version 4 (TCP/IPv4)** and then **Properties**.
   vi. Click **Use the following IP Address:** and type:
      - IP address: 10.19.1.5
      - Subnet mask: 255.0.0.0.
      - Click **Ok,** then **Ok** again.
   vii. From the Windows menu, navigate to the **Windows Firewall**.
   viii. Click **Turn Windows Firewall on or off.** Turn off the firewall for each network type.

b. Open a web browser and type the IPICO Reader's IP address in the address bar: **10.19.1.101.** Click **Ok** with blank username/password.

c. Click **Network** in the left menu pane.

d. Enter a new IP address and subnet mask for the IPICO Reader that is compatible with your FinishLynx network:
   - IP address: 192.168.0.151
   - Netmask: 255.255.255.0

e. Click the **Ok** button. Then click **Apply Settings** in the left menu pane.

f. Reset the computer's IP address back to the initial settings (ie. 192.168.0.5).

Step 4: Install the Software

a. Insert the Lynx Resource USB into your computer.

b. Follow the instructions to install FinishLynx software, LapTime (LT) plug-in, and Network COM Port (NCP) plug-in.

c. When prompted, enter the serial number found in the serial numbers file on the USB drive.

d. Open FinishLynx, click **Help | About** and verify a serial number is listed next to LapTime and Network COM Port (this verifies installation was successful).

Step 5: Set Up LapTime Options

a. Open FinishLynx and click **File** | **Options**. Select the **LapTime** tab in the **Options** window.

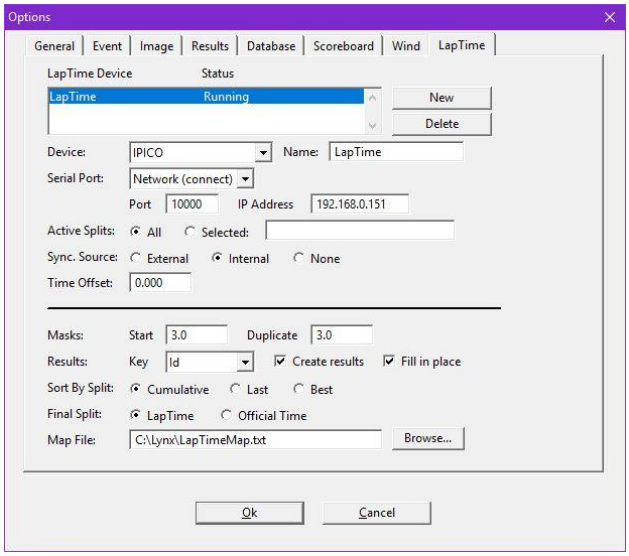
b. Click the **New** button to create a new LapTime Device with all settings as shown to the right.

c. Click **Browse…** for Map File after one is created (see Step 7) and navigate to select the saved file.

d. Select the **Results** tab. Scroll the *Fields* list and enable **Cumulative Split Time**, **Last Split Time** and **Laps.**

e. Close, then restart FinishLynx. Go to the **LapTime Options** and verify Status is now *Running*.

Note: To use the IPICO System without a camera, go to **File** | **Options.** On the **General** tab set Hardware Type to **None** and then restart FinishLynx. This will allow a manual start to be accepted.



Step 6: Hidden Settings for LapTime Options

Optional: Follow these steps to allow the *Time* field in the *Results Zone* to be populated with the *Cumulative Split Time* at the finish of the race (when laps to go = 0) when using a camera, instead of evaluating each competitor from the image.

a. Open FinishLynx. Hold down **CTRL** + **SHIFT** and click **File** | **Options.** A window for *Other Settings* will open.

b. Click the **+** next to LapTime. A deeper menu appears. Select **FillInTime** and enter Value: **2** (Always)

Optional: For advanced users – Follow these steps to control which chip read is accepted by FinishLynx.

c. Scroll down and click the **+** next to IPICO and select **Suffix**.

d. In the text box, you have 3 options to use: **FS** (First Seen), **LS** (Last Seen) and **Blank** (Raw Data).

Blank (default): For the Reader on Port 10000. This will read the chip every time it is detected. The Start and Duplicate mask time in FinishLynx will affect how often the Raw Data chip reads are accepted. *(Recommended)*

FS: Can be used for the Reader at the finish line on Port 10200 to read the First Seen chip read only.

- Set the port to **10200** under LapTime | Options.

LS: Typical for the Reader used at a Start Line on Port 10200 to only accept the Last Seen chip read as the competitor has passed the mat for the last time.

- Set the port to **10200** and Start Mask to **0.0** when using IPICO and the LS hidden setting.

Step 7: Creating a Map File for FinishLynx

A Map File is used to associate a specific Chip ID sequence with an ID/Bib number in FinishLynx. All shoe tags (chips) should be labeled clearly in a sequential order before beginning to create a Map File.

Alternative Method: Use the optional IPICO Registration Reader and Tag Scanner application. See IPICO documentation for details.

a. In FinishLynx, go to **File** | **Options** and select the **Database** tab. Note the *Output Directory:*. The *.lif file will be saved to this directory.

b. **If not using a camera**: Select **General** tab and set *Hardware Type* to **None.** Close and restart FinishLynx. (This allows a Manual start for the timer without having a camera attached).

c. Create a **New Blank Event**, click **LapTime** in the *Information Zone* and set the Laps to 1.

d. Click **Event | Manual Start…** Hit the **SPACEBAR**.

e. Pass chip #1 over the mat and verify that the tag ID appears in the ID column, a time is assigned, and a number 1 appears in the Place column of the Results Zone.

f. Continue passing shoe tags over the mat in sequential order and verify that **Place** matches the chip ID/Bib number.

g. Once all chips have been read into FinishLynx, click **File** | **Save LIF**.

h. Navigate to the **Output Directory:** where the .lif file is saved and open the .lif file in Notepad or Excel.

i. There are two options to edit the .lif file and create the Map File for the shoe tag (chip) ID.
   i. Manually edit the *.lif by deleting the obsolete information and characters in Notepad.
   ii. Import the .lif file to Excel, delete the unnecessary columns, convert to a CSV file, and rename as a *.txt file for the ID mapping.

Manual edit of the .Lif File to Map File

a. Manually edit the *.lif file until each line contains the Place value, a comma, and the chip internal ID. (12-digit code)

Example (no spaces before or after the comma):
- 1,05800151f932
- 2,05800151f60f

b. Save the new file created as a *.txt file.

Create a Map File by Importing to Excel

a. Open Excel and click **File** | **Open**. Select **All Files** in the *File Type* drop-down.

b. Navigate to the directory where the *.lif file was saved. Double-click the *.lif file and the *Text Import Wizard* will open.

c. Click the radio button for **Delimited** then **Next**.

d. Click the box for **Comma** under *Delimiters*, then **Next.**

e. Click on the chip ID column to highlight it.

f. Click the radio button for **Text** under *Column Data Format* then **Finish**.
- Newer version of Excel allow each column to be highlighted and a Skip option to select – if so, select all columns except Place (1) and Shoe Tag (chip) ID (2) and select the **Skip** option. Click **Finish.**

g. An Excel file will open with each bit of unique data in a separate column.
   i. Delete all columns except the Place (1) and Shoe tag (chip) ID (2).
   ii. Delete Row 1 (LIF file information 0,0,…)

h. Click **File** | **Save As**. Click the drop-down for *Save as type:* and choose **CSV (Comma delimited)**

i. In *File Name:* type a unique name for the file then **Save**.

j. In File Explorer, go to the directory where the CSV file was saved.

k. Right-click on the CSV file and select **Open With** from the menu. Choose **Notepad** from the selections.

l. Click **File** | **Save As**. In the *File Name*: delete the .csv extension.
   i. Verify that *Save as type:* is Text Documents (*.txt).
   ii. Encoding should read **ANSI**.
   iii. Click **Save** and the Map File is complete.

After creating the Map File, be sure to direct the Map File directory to the file in the LapTime Option.

Step 8: Test Map File

a. In FinishLynx, go to **LapTime** | **Options**. Click **Browse…** next to **Map File:**.

b. Select the **Map File** from the previous step then **Ok**.

c. Create a **New Blank Event**, click **LapTime** in the *Information Zone* and set the *Laps* to **1** or higher.

d. Click **Event | Manual Start…** and hit the **SPACEBAR**.

e. Pass a shoe tag (chip) over the mat (antenna) and see if result data is captured and displayed. The ID column should display the ID/Bib number entered in the map file (not the internal Chip code).

f. You are now ready for your first race!

Note: Pay attention to the time as the chip passes over the antenna (beeps when read) and the time displayed in the Cumulative Lap Time. If there is a significant delay and a time difference, shut down system and follow directions methodically and accurately – this means there was not a proper synchronization of the systems.

This completes the FinishLynx CROSS COUNTRY IPICO RFID LapTime System Quick Start Guide